

# ***EURO HAWK* Project Overview**



**An Airborne System  
with Stand-off Capability for  
Wide-Area Intelligence, Surveillance and  
Reconnaissance  
meeting European NATO countries' ISR Requirements**

June 2002, Paris

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# ***EURO HAWK* Program**

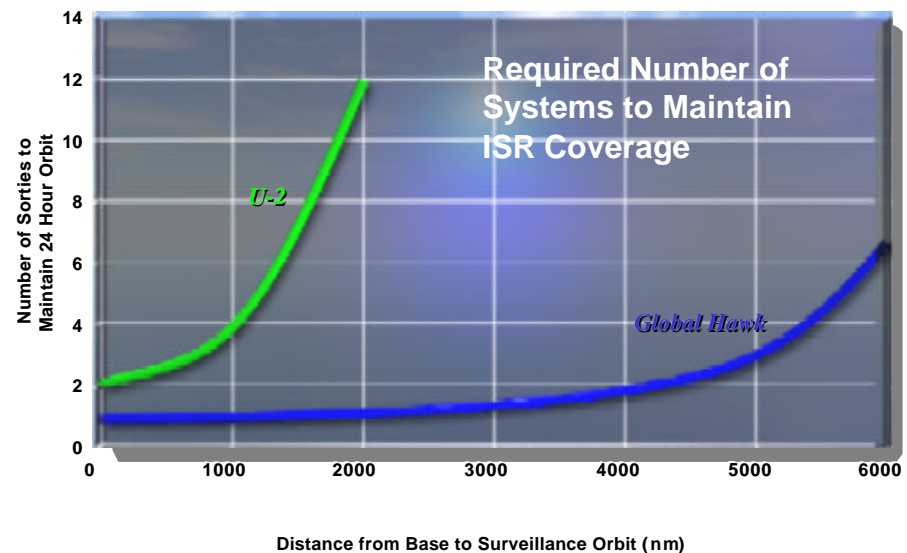
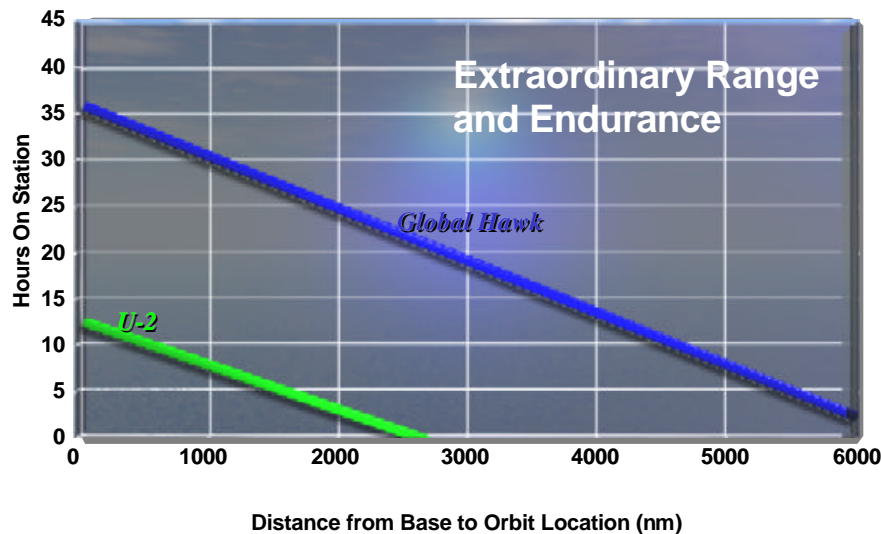
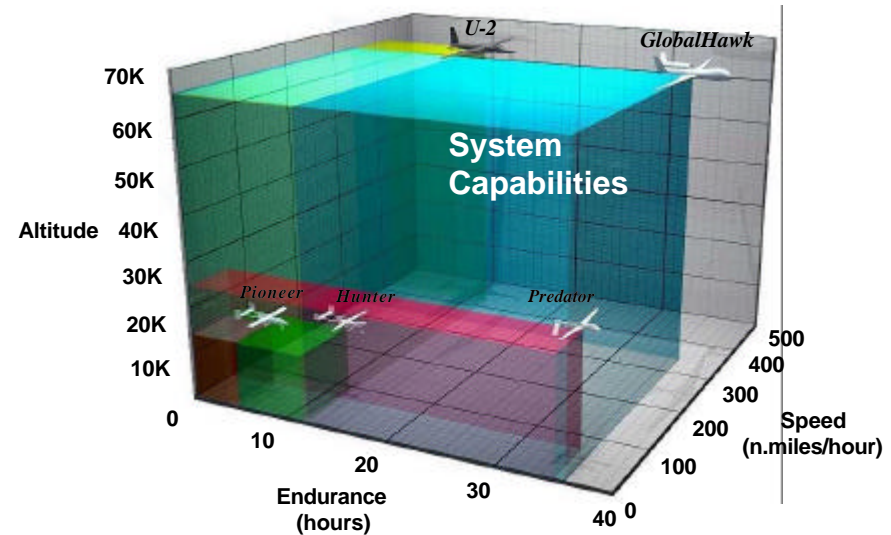
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- **EADS has identified the Global Hawk platform as being the most appropriate to fulfil the German requirements for wide area IMINT surveillance.**
  
- **EADS and Northrop Grumman envision to co-operate on a *EURO HAWK* system concept**
  - **Global Hawk as the optimised HALE platform**
  - **Mission systems as directed by German / European customers**
  
- **EADS and NGC start a demonstrator program with Global Hawk, in order to answer technical and operational questions regarding the operation of an unmanned SIGINT system.**

# Why the Global Hawk platform?

Provide Continuous Day/Night,  
High Altitude, All Weather  
Surveillance in Direct Support of  
Allied Ground and Air Forces  
Across the Spectrum of Conflict

Increase the Reach of Existing  
and Future Surveillance Systems

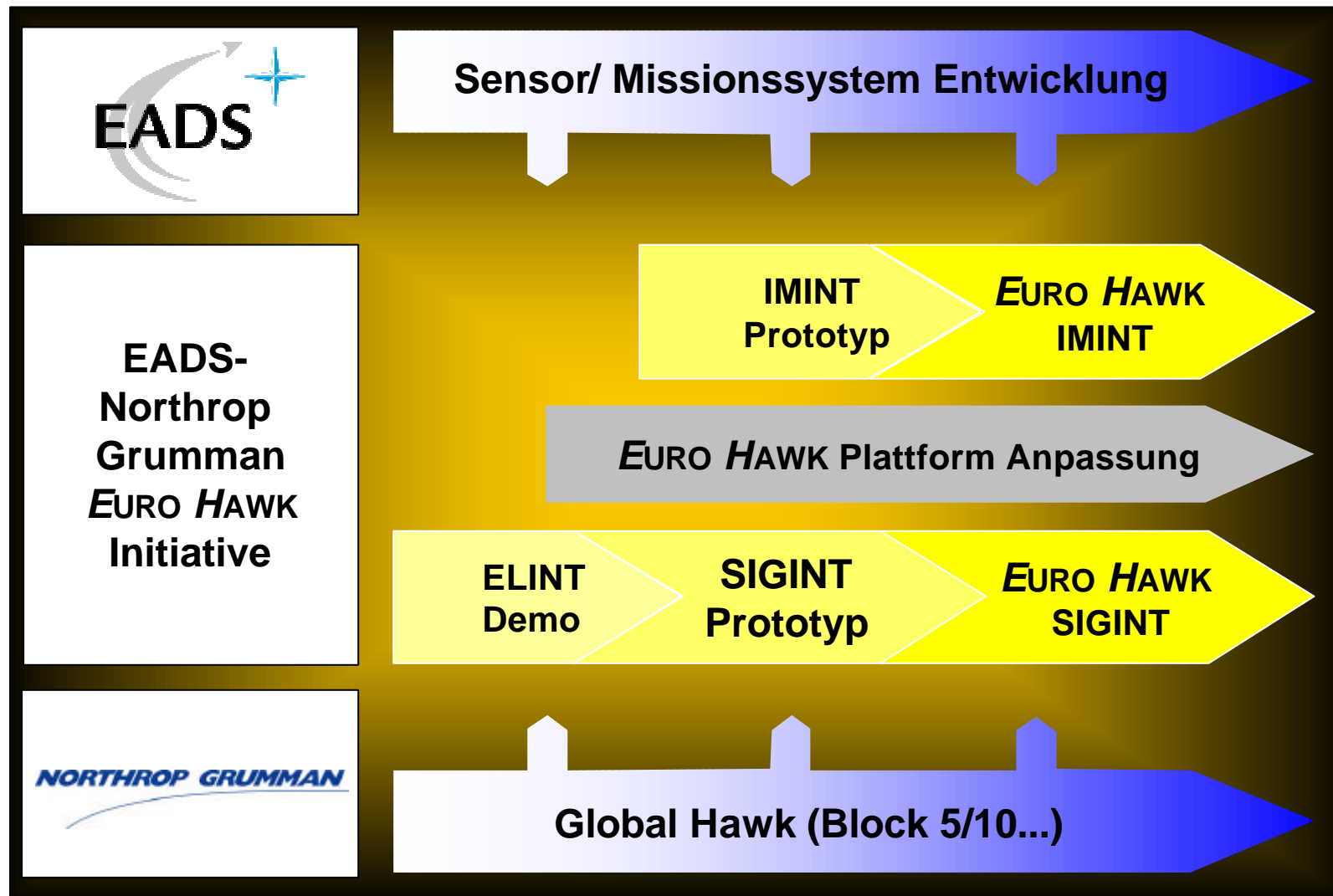


# **EADS and Northrop Grumman - Combination**

**Northrop Grumman and EADS are using their combined expertise to evaluate HALE UAV solutions tailored for the need of European NATO countries excl. UK, based on the Global Hawk UAV system and German/ European mission equipment.**

- Northrop Grumman, with extensive UAV system integration expertise, is producing the Global Hawk HALE UAV, now in demonstration flight testing, for the U.S. Air Force.
- EADS Systems & Defence Electronics is developing state-of-the-art ELINT mission equipment as well as a synthetic aperture radar/ moving target indicator (SAR/MTI) sensor in cooperation with four other European nations.
- EADS Military Aircraft has far-reaching experience in aircraft design, development, production and system integration.

# Joint “timetable”



# **Euro Hawk Project Overview**

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- **First Step – Address Emerging German Requirements for Wide Area Surveillance**
  - SIGINT, to replace aging Breguet Atlantic SIGINT, with an IOC in 2008
  - Other advanced ISR applications are likely
  - HALE UAVs Provide Persistent Standoff Wide Area Surveillance
  - Proven Platform (Global Hawk) Reduces Cost, Risk and Schedule
  - MOD Preference for German/ European Mission Systems
- **ELINT Prototype Evaluation Planned in 2002/2003 to Establish Proof of Concept**
  - Gov't-to-Gov't Project Agreement; Technical Assistance Agreement Signed By NGC, EADS Entities and German MOD
- **Building Block Approach**
  - Define Euro Hawk System to Meet German ISR Needs, Starting with SIGINT Program
  - Explore Other German and European NATO HALE UAV ISR Program Opportunities As They Emerge

# **ELINT demonstration**

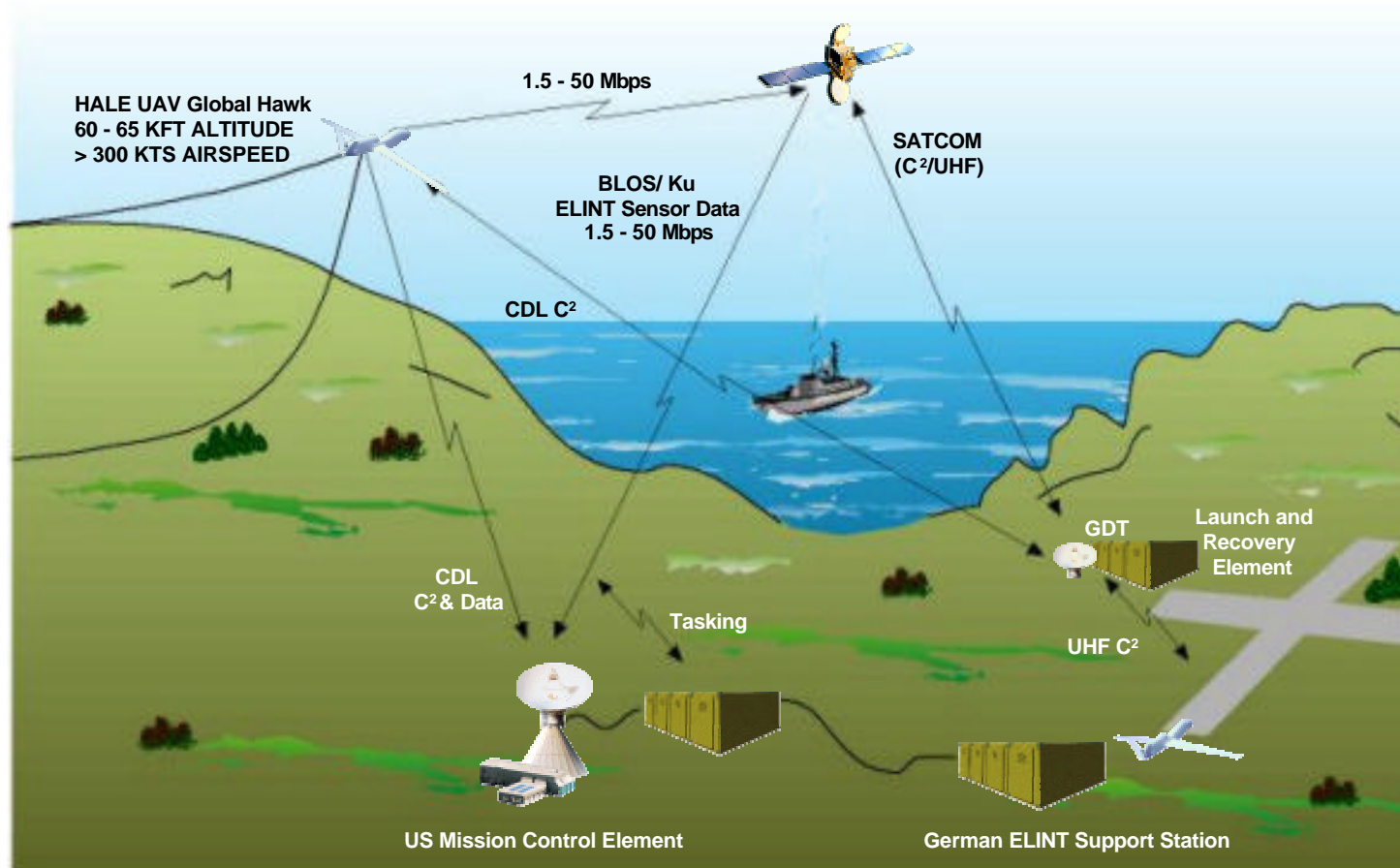
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- **EADS and NGC have teamed to fly the Global Hawk with a German ELINT mission payload.**
  - **To demonstrate technical feasibility to use the Global Hawk platform for various missions as a universal carrier for mission equipment for surveillance and reconnaissance**
  - **To demonstrate advantages and limits of unmanned systems of that UAV class for SIGINT and reconnaissance tasks in general**
- **EADS' ELINT payload will perform passive Electronic Surveillance, which means an electronic sensor suite to detect and locate electronic emissions from surface emitters**

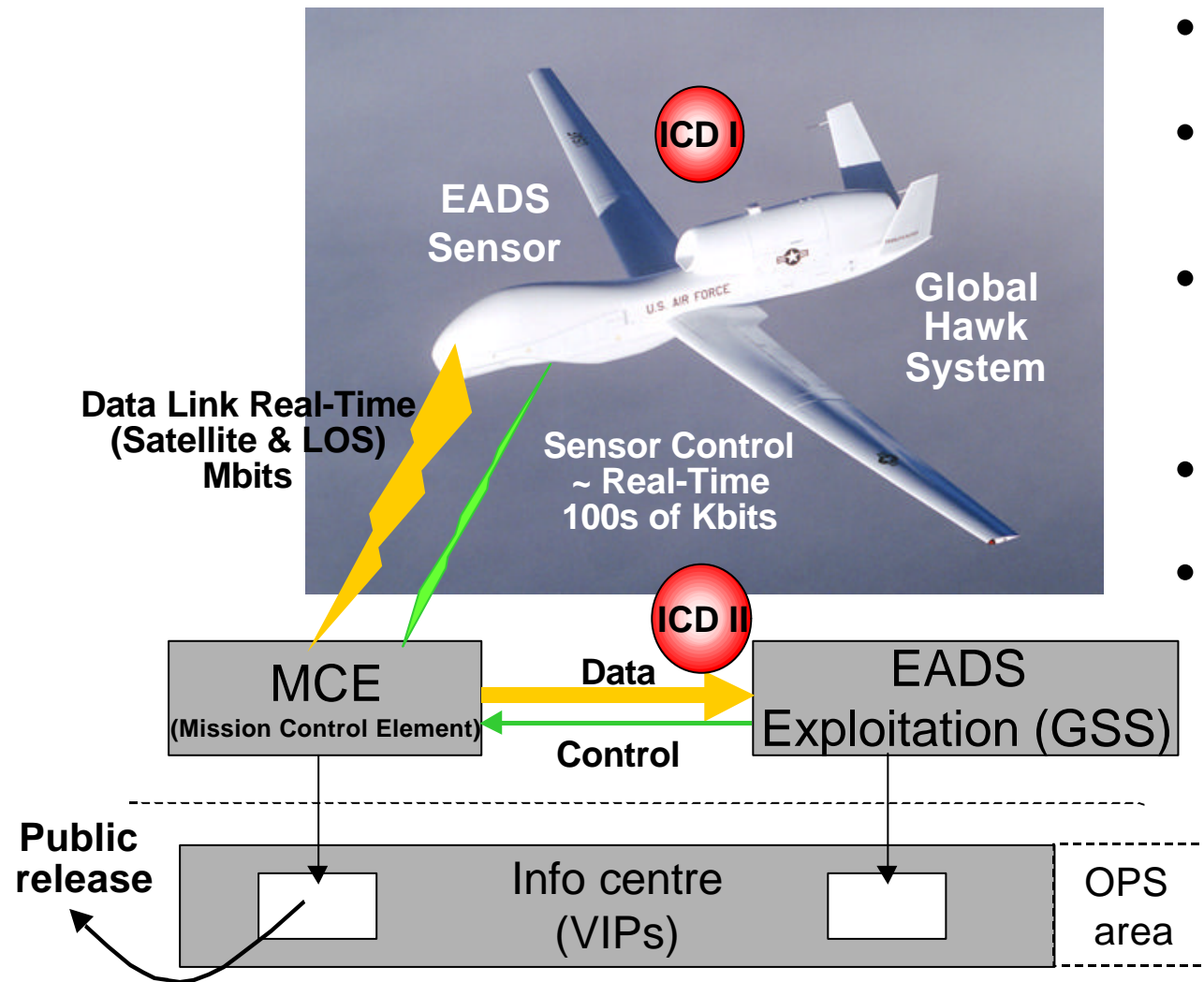
**The demo will create the basis to realise an unmanned prototype for SIGINT intelligence until 2004**



# 2002 demo architecture



# ELINT Evaluation Architecture, Early '03



- Evaluate HALE UAV SIGINT Concept
- U.S. DOD and Ge MOD Have a Signed Project Agreement
- Technical Assistance Agreement Signed By NGC, EADS and Ge MOD
- Airfields in Northern Germany
- USAF Global Hawk and Ground Segment; EADS ELINT Sensor

# ELINT Demo Update

- **Major Events**

- EADS Provides ELINT Sensor Prototype
- Integrate In Systems Integration Lab at NGC
- Test in Global Hawk at Edwards AFB
- Flight Demos in Northern Germany

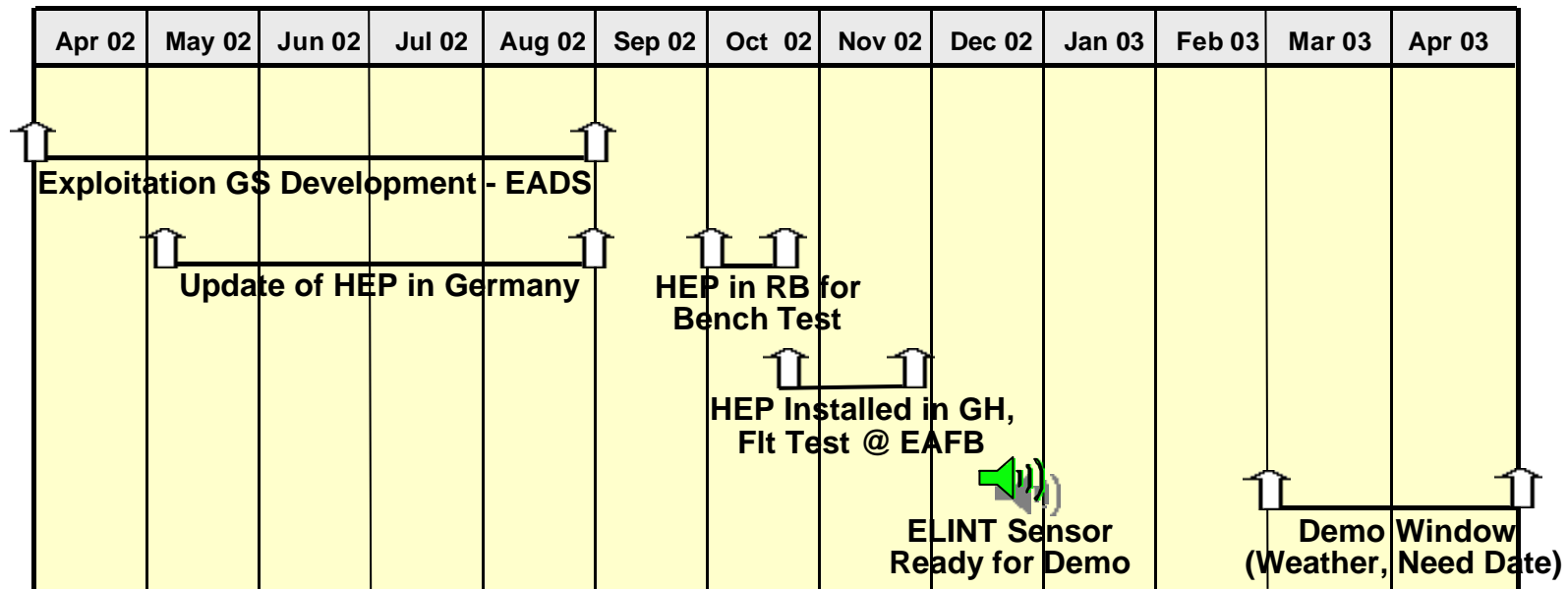
## **Date**

**Aug '02**

**Oct '02**

**Nov '02**

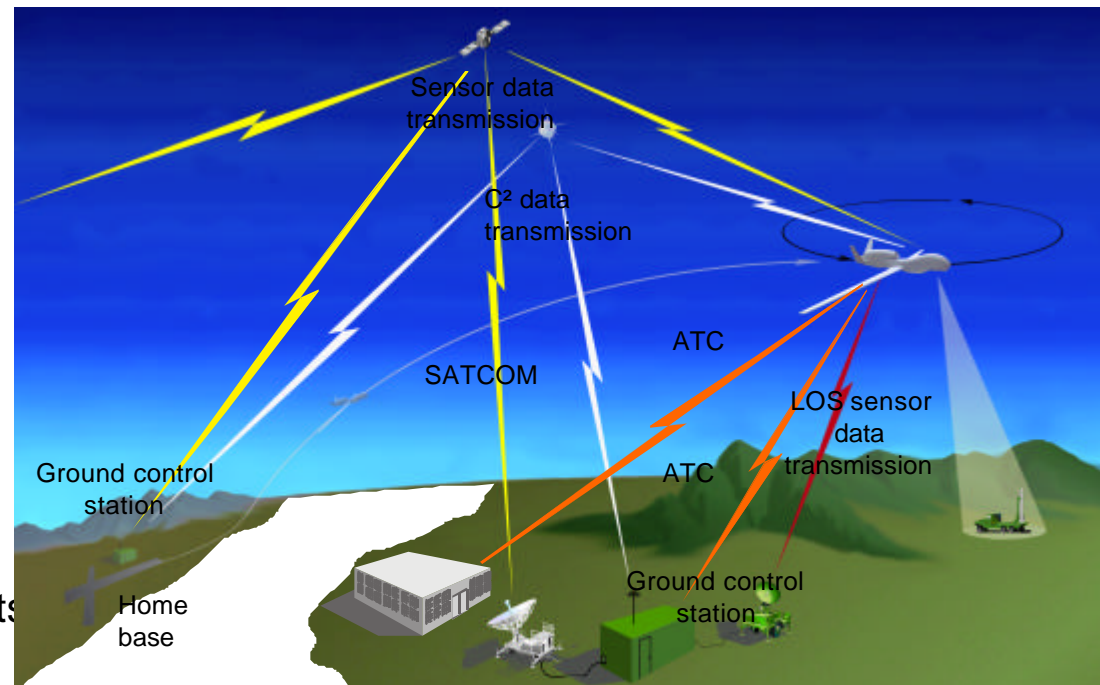
**Early '03**



# Target System HALE UAV: "EURO HAWK"

- ❑ System concept according to the requirements of the German/  
European NATO (excl. UK) customer:

- Operating radius  
~ 3000 km around Germany
- $\leq 36$ h Time on station
- High speed
- Command & Control (C<sup>2</sup>)  
Data transmission  
(BLOS + LOS)
- Sensor data transmission  
(BLOS + LOS)
- Fulfilment of the requirements  
clearance and reliability of  
European Authorities



- ❑ System concept according to European SATCOM-Infrastructure  
(Availability, Coverage, etc.)
- ❑ Application of European data transmission technology and  
components

# **Euro Hawk in the German ISR architecture**

- **By adding a wide-area capability of stand-off surveillance and SIGINT, the *EURO HAWK* completes the existing German tactical and operational systems such as CL-289**
- **The *EURO HAWK* solution will be available in time for the replacement of the existing SIGINT aircraft Breguet Atlantic in 2008**
- **The *EURO HAWK* product (based on platform status 2004) will be able to carry the European SOSTAR sensor and thus fulfil the advanced imagery intelligence requirement**
- **The *EURO HAWK* approach ensures interoperability between national and NATO systems in accordance with the conceptual guidelines of a joint ISR architecture**

# Conclusions

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- **Surveillance and Reconnaissance System (strategic-operational)**
- **Wide-Area, continuous surveillance (AGS capability)**
- **All-weather target identification and tracking (MTI) (identification under favourable conditions)**
- **Endurance > 30hrs, range > 6000km**
- **Very high survivability in conflicts (stand-off capable sensors (esp. SOSTAR), high altitude >60.000ft)**
- **Ideal, non-penetrating/ non-invasive System for information gathering, applicable even in peace time and early crises phases**

***EURO HAWK closes the capability gap  
“wide-area surveillance and reconnaissance” in Germany***

# Summary

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- **EADS and NGC Are Collaborating to Offer the Most Cost-Effective Solution to Meet Wide Area Surveillance Needs**
- **Use Derivative of Global Hawk UAV and C<sup>2</sup>, Subject to USG Export Approval**
  - **HALE UAV Offers Persistence, Standoff Capability, Survivability**
  - **Embodies Mature, But State-of-the-Art, GH Technologies**
- **EADS is Offering Mission and Exploitation Systems That Meet German National Requirements, and Provides Interoperability with NATO**
- **Using Building Block Approach**
  - **Define Solution for Ge SIGINT That Anticipates Future ISR Needs**
    - **Provide Common Platform, C<sup>2</sup>, Exploitation Subsystem and Support Infrastructure to Reduce ISR Architecture Costs**
  - **Explore and Evaluate Needs of Other European NATO Countries**

# Global Hawk (US ACTD\*)

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## CHARACTERISTICS

**Maximum Range**

**Maximum Altitude**

**Maximum Endurance**

**Payload Mass**

**Flight Critical Reliability**

**SATCOM Datalink**

**LOS Datalink**

## PROJECTED PERFORMANCE

13,500 NMI (25 000 km)

65,000 ft (20 000 m)

36 Hrs

2 000 lbs (910 kg)

1 Loss in 605

1.5, 8.67, 20, 30, 40, 47.9 Mbps

137 M bps